anticoagulation with mechanical valve replacement, should be balanced against the risk of proximal reoperation during follow-up. Regarding the published experiences of centers favoring aortic root preservation in the setting of acute type A dissection, it has been our institution's policy to consider more definitive aortic root repair for patients presenting with dissection of all sinuses, an aortic root diameter >47 mm, or dissection extending to the iliac arteries.[2-4]

Bartosz Rylski, MD
Friedhelm Beyersdorf, MD, PhD
Matthias Siepe, MD
Heart Center Freiburg University
Freiburg, Germany

References

1. Hajj-Chahine J. Fate of the preserved aortic root in acute type A aortic dissection. *J Thorac Cardiovasc Surg*. 2014;147:1112.
2. Rylski B, Beyersdorf F, Blanke P, Boos A, Hoffmann I, Dashkevich A, et al. Supracoronary ascending aortic replacement in patients with acute aortic dissection type A: what happens to the aortic root in the long run? *J Thorac Cardiovasc Surg*. 2013;146:285-90.
3. Concistrè G, Casali G, Santaniello E, Montalto A, Fiorani B, Dell'Aquila A, et al. Reoperation after surgical correction of acute type A aortic dissection: risk factor analysis. *Ann Thorac Surg*. 2012;93:450-5.
4. Ro SK, Kim JB, Hwang SK, Jung SH, Choo SJ, Chung CH, et al. Aortic root conservative repair of acute type A aortic dissection involving the aortic root: fate of the aortic root and aortic valve function. *J Thorac Cardiovasc Surg*. 2013;146:1113-8.

http://dx.doi.org/10.1016/j.jtcvs.2013.11.008

FIBROSING INTERSTITIAL PNEUMONIA: IS MECHANICAL VENTILATION ALWAYS THE FINAL ALTERNATIVE FOR THE INTENSIVIST?

To the Editor:

Currently, invasive mechanical ventilation (IMV) in patients with fibrosing interstitial pneumonia is a devastating situation in the intensive care unit (ICU). After 2 decades, the prognosis is still poor.

Gaudry and colleagues,[1] in an original retrospective multicenter French study, describe short- and long-term outcomes in critically patients with fibrotic lung diseases undergoing IMV. In their view, more frequent use of lung protective strategies may influence poor outcomes, and individual evaluation case-by-case evaluation is needed for appropriate discrimination of ICU patients. Their arguments are solid, rational, and comprehensive for current practice and across all published studies, although major drawbacks of this study were its retrospective design and limited number of patients, Obviously, the recommendations are reasonable and appropriate; however, some points need to be taken into account:

First, the authors did not describe reasons for underuse of lower-level aggressive ventilation alternatives before IMV in these populations. Were the use of noninvasive ventilation and criteria for IMV in this study reflected properly? Recently, new and promising observations have emerged: (1) Although there is still only a small number of studies, early use of noninvasive ventilation in selected patients may avoid IMV and improve clinical conditions at ICU admission.[2] (2) Nasal high-flow cannulation may improve oxygenation in concert with low positive end-expiratory pressure in selected patients. Some patients with pulmonary fibrosis have been treated under expanded indications for nasal high-flow cannulation with promising results.[3]

Second, it is interesting that patients who met criteria for lung transplant and were breathing spontaneously with noninvasive ventilation have shown the best outcome as bridge to lung transplant and adequate results after bilateral lung transplant.[4] These are promising alternatives to IMV for selected patients.[2-4]

Third, lung-protective ventilation arguably provides the best hope for good results of IMV in these patients. It is a reasonable hope; however, lung damage is currently equally associated with high levels of inspiratory oxygenation fraction and low tidal volume with high or normal positive end-expiratory pressure.[5] Although large, prospective studies are nonexistent, it is a promising avenue.

Finally, it would be interesting to know details regarding survivors that are lacking in these studies, such as measurements of health-related quality of life, and the influence of specific natural history, such as rates of hospital admission and exacerbations after ICU discharge and impact of early pulmonary rehabilitative programs.

Further large international database studies will illuminate solid bases to define risk factors and prognosis in these directions.

Antonio M. Esquinas, MD, PhD, FCCP
Intensive Care Unit and No Invasive Ventilatory Unit
Hospital Morales Meseguer
Murcia, Spain

References

1. Gaudry S, Vincent F, Rabbat A, Nunes H, Crestani B, Naccache JM, et al. Invasive mechanical ventilation in patients with fibrosing interstitial pneumonia. *J Thorac Cardiovasc Surg*. 2014;147:47-53.
2. Güngör G, Tatar D, Saltürk C, Çimen P, Karakurt Z, Kirakli C, et al. Why do patients with interstitial lung diseases fail in the ICU? A 2-center cohort study. *Respir Care*. 2013;58:525-31.
3. Bräunlich J, Beyer D, Mai D, Hammerschmidt S, Seyfarth HJ, Wirtz H. Effects of nasal high flow on ventilation in volunteers, COPD and idiopathic pulmonary fibrosis patients. *Respiration*. 2013;85:319-25.
4. Crotti S, Iotti GA, Lissoni A, Belliato M, Zanierato M, Chierichetti M, et al. Organ allocation waiting time during extracorporeal bridge to lung transplant affects outcomes. *Chest*. 2013;144:1018-25.
5. Altemeier W, Sinclair SE. Hyperoxia in the intensive care unit: why more is not always better. *Curr Opin Crit Care*. 2007;13:73-8.

http://dx.doi.org/10.1016/j.jtcvs.2013.09.077

Reply to the Editor:

We thank Dr Esquinas for his comments and interest in our work.[1] First, we would like to underline that our goal was not to promote invasive mechanical ventilation (IMV) for patients with end-stage fibrosing interstitial pneumonia but rather to provide an update on their prognosis. Obviously,

several options must be discussed, and our contention is that IMV should not be systematically denied in case of acute respiratory failure (ARF).

As indicated in our article,[1] a large proportion of our patients (19/27; 70%) underwent noninvasive ventilation (NIV) before intubation. Even if NIV is sometimes an interesting option in the management of acute exacerbation of chronic interstitial pneumonia,[2] its effectiveness remains questionable for that as well as hypoxemic ARF.[3] In a retrospective study cited by Esquinas, Güngör and colleagues[4] concluded that NIV could be an option in less severely ill patients with Acute Physiology And Chronic Health Evaluation II scores less than 20. In comparison, our patients had an average Acute Physiology And Chronic Health Evaluation score II of 22 ± 11. Otherwise, high-flow nasal cannula oxygen (HFNC) is a very attractive option for the treatment of hypoxemic ARF. Observational studies suggest that HFNC might reduce the need for intubation in this setting by improving oxygenation.[5,6] Our patients did not receive HFNC, because this technique was not used in the participating intensive care units at the time of the study (2002-2009). Today, we routinely use HFNC in patients with ARF complicating fibrotic interstitial pneumonia.

As discussed in our article, recent studies evaluating extracorporeal membrane oxygenation as a bridge to lung transplant have yielded very encouraging results.[7,8] This strategy may prove beneficial for these patients because it improves oxygenation, allows patients to be kept awake and sometimes spontaneously breathing, and enables pretransplant rehabilitation.[9] In light of the recent article by Crotti and colleagues,[10] we think, unlike Dr Esquinas, that it is not possible to conclude that NIV combined with extracorporeal membrane oxygenation allows better outcome as a bridge to lung transplant. Indeed, in this retrospective study,[10] patients receiving IMV (n = 9) probably had more severe conditions than patients receiving NIV (n = 8) as attested by their Sequential Organ Failure Assessment score before lung transplant (8.7 ± 1.9 vs 6.5 ± 2.6, respectively; $P = .07$). Moreover the 1-year survivals in the 2 groups were similar (75% vs 77%).

Lung-protective ventilation is certainly a major breakthrough of recent years, and this ventilation strategy is particularly appropriate for patients with very low lung compliance, as in the cases of acute respiratory distress syndrome (ARDS) and pulmonary fibrosis. In acute respiratory distress syndrome, the optimal level positive end-expiratory pressure remains open to debate.[11] A few data suggest that high positive end-expiratory pressure levels are associated with decreased survival in patients with interstitial lung disease on IMV.[12]

Finally, we did not evaluate the health-related quality of life after intensive care unit discharge. We think that satisfactory health-related quality of life cannot be achieved for these patients in the absence of lung transplant, which is the only long-lasting way to improve survival and health-related quality of life.

Stephane Gaudry, MD[a]
Yves Cohen, MD, PhD[b]
Antoine Rabbat, MD[c]
Hervé Mal, MD, PhD[d]
[a]*Service de Réanimation Médicale et des Maladies Infectieuses*
Hôpital Bichat
Assistance Publique Hôpitaux de Paris
Université Denis Diderot
Paris, France
[b]*Service de Réanimation Médico-Chirurgicale*
Hôpital Avicenne
Assistance Publique Hôpitaux de Paris
Bobigny, France
[c]*Service de Réanimation Respiratoire*
Hôtel Dieu
Assistance Publique Hôpitaux de Paris
Paris, France
[d]*Service de Pneumologie B*
Hôpital Bichat
Assistance Publique Hôpitaux de Paris
Université Denis Diderot
Paris, France

References

1. Gaudry S, Vincent F, Rabbat A, Nunes H, Crestani B, Naccache JM, et al. Invasive mechanical ventilation in patients with fibrosing interstitial pneumonia. *J Thorac Cardiovasc Surg*. 2014;147:47-53.
2. Tomii K, Tachikawa R, Chin K, Murase K, Handa T, Mishima M, et al. Role of noninvasive ventilation in managing life-threatening acute exacerbation of interstitial pneumonia. *Intern Med*. 2010;49:1341-7.
3. Nava S, Schreiber A, Domenighetti G. Noninvasive ventilation for patients with acute lung injury or acute respiratory distress syndrome. *Respir Care*. 2011;56:1583-8.
4. Güngör G, Tatar D, Saltürk C, Çimen P, Karakurt Z, Kirakli C, et al. Why do patients with interstitial lung diseases fail in the ICU? A 2-center cohort study. *Respir Care*. 2013;58:525-31.
5. Ricard JD. High flow nasal oxygen in acute respiratory failure. *Minerva Anestesiol*. 2012;78:836-41.
6. Sztrymf B, Messika J, Bertrand F, Hurel D, Leon R, Dreyfuss D, et al. Beneficial effects of humidified high flow nasal oxygen in critical care patients: a prospective pilot study. *Intensive Care Med*. 2011;37:1780-6.
7. Hoopes CW, Kukreja J, Golden J, Davenport DL, Diaz-Guzman E, Zwischenberger JB. Extracorporeal membrane oxygenation as a bridge to pulmonary transplantation. *J Thorac Cardiovasc Surg*. 2013;145:862-7; discussion 867-8.
8. Toyoda Y, Bhama JK, Shigemura N, Zaldonis D, Pilewski J, Crespo M, et al. Efficacy of extracorporeal membrane oxygenation as a bridge to lung transplantation. *J Thorac Cardiovasc Surg*. 2013;145:1065-70; discussion 1070-1.
9. Fuehner T, Kuehn C, Hadem J, Wiesner O, Gottlieb J, Tudorache I, et al. Extracorporeal membrane oxygenation in awake patients as bridge to lung transplantation. *Am J Respir Crit Care Med*. 2012;185:763-8.
10. Crotti S, Iotti GA, Lissoni A, Belliato M, Zanierato M, Chierichetti M, et al. Organ allocation waiting time during extracorporeal bridge to lung transplant affects outcomes. *Chest*. 2013;144:1018-25.
11. Briel M, Meade M, Mercat A, Brower RG, Talmor D, Walter SD, et al. Higher vs lower positive end-expiratory pressure in patients with acute lung injury and acute respiratory distress syndrome: systematic review and meta-analysis. *JAMA*. 2010;303:865-73.
12. Fernández-Pérez ER, Yilmaz M, Jenad H, Daniels CE, Ryu JH, Hubmayr RD, et al. Ventilator settings and outcome of respiratory failure in chronic interstitial lung disease. *Chest*. 2008;133:1113-9.

http://dx.doi.org/10.1016/j.jtcvs.2013.11.008